

REMARKS

The specification has been amended to eliminate the reference to a specific claim on page 2 and to correct a grammatical error on page 3.

A substitute set of drawings as submitted herewith for figures 1 and 2, which are identical to original figures 1 and 2, with the addition of reference numerals for figures 1 in the event figure 1, as filed, did not have reference numerals.

In the last Office Action claims 1, 2, 4 and 6-15 inclusive were rejected under 35 U.S.C. § 102(b) as being anticipated by Bickel et al. (US 4,825,036). Claim 3 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Bickel et al. and claim 5 was rejected under 35 U.S.C. § 103(a) as being unpatentable over Bickel et al. in view of DE 44 24 492.

Original claims 1-15 inclusive have been canceled without prejudice in order to advance the prosecution of the present application and new claims 16-28 inclusive have been substituted therefore. Reconsideration and allowance of the application are respectfully requested in view of the following remarks.

New independent claim 16 directed to a remote laser welding system contains the limitations of original claim 1 and additionally sets forth the details of the mirror orienting means and the focusing means. New independent claim 23 directed to a remote laser welding method contains the limitations of original method claim 9 with additional steps relating to the orientation of the laser beam and the focusing of the laser beam.

The patent to Bickel et al. is directed to a device for directing optical rays for laser machining. The device comprises an optical head including a first fixed mirror deflecting the laser beam from a vertical to a horizontal axis and a pivoting mirror substantially deflecting a laser beam again on a vertical axis. Downstream of the pivoting mirror is a ray exit member also pivotable which contains a focusing lens which is stationary with respect to the ray exit member so as to focus the laser beam on a surface. Three-dimensional focusing of the laser beam requires displacing the optical head as a whole along the vertical axis. Bickel et al. fails to disclose a mobile mirror pivoting on a first horizontal axis arranged on the plane of said mobile mirror orthogonally to said horizontal direction and turning on a horizontal axis coinciding with the horizontal direction to orient the spatial sector on a vertical plane as specifically called for in new claim 16. The only focusing lens disclosed in Bickel is located downstream of the stationary mirror whereas new claim 16 specifically sets forth that the focusing lens is arranged upstream of the stationary mirror and being vertically displaceable within the head along a vertical direction so as to focus the laser beam on different distances inside the spatial sector. Therefore it is submitted that new claim 16-22 directed to a remote laser welding system are clearly not anticipated by Bickel et al. and set forth specific details which would not be the least bit obvious to one skilled in the art in view of the teachings of Bickel et al.

New independent claim 23 directed to a remote laser welding method specifically sets forth that the orienting of the laser beam is accomplished by deviating the laser beam within an optical head from the incoming vertical direction and consequently orienting the laser beam around a first horizontal axis which is orthogonal to the horizontal direction as well as around a

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second horizontal axis coinciding with the direction. The orientation of the laser beam of Bickel et al. is deviating from an incoming vertical direction to a horizontal direction but is only oriented around a single horizontal axis whereas new claim 23 specifically calls for the laser beam being oriented around a first horizontal axis orthogonal to the horizontal direction as well as around a second horizontal axis coinciding with the vertical direction. As pointed out previously with respect to claim 16 the new method claim 23 is specific to the focusing step being performed within the optical head upstream of the orienting step and along the vertical direction so as to focus the laser beam on different distances beside the spatial sector. Such a focusing step is impossible with the system of Bickel et al. since the focusing step in Bickel takes place after the orienting step. Therefore, claim 23 is clearly not anticipated by Bickel et al. nor would it be the least bit obvious in view of the teachings of Bickel et al.

In view of the foregoing amendments and arguments it is submitted that independent claims 16 and 23 are clearly patentable over the prior art and it is respectfully requested that these claims along with claim 17-22, which are dependent from claim 16, and claims 24-28 which are dependent from claim 23 be allowed and the application passed to issue forthwith.

If for any reason the Examiner is unable to allow the application on the next Office Action and feels that an interview would be helpful to resolve any remaining issue, the Examiner is respectfully requested to contact the undersigned attorney for the purpose of arranging such an interview.

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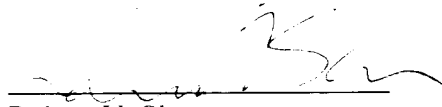
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